Wildlife Health Center: Balancing the needs of people and wildlife

Anchored in their feathery kelp beds atop the sea swells, a group of otters snooze. Cradled in the gently rocking waves as the sun peeks through the morning fog, the otters are unaware that they constitute a portion of a declining population. Below the ocean surface, two California Department of Fish and Game (DFG) divers cautiously swim up through the cloudy water. Out in front of the lead diver a net capture device is

By Nancy D. Ottum

poised to swiftly surround one of the otters as it is pushed up from below. In a matter of seconds, the diver surges to the surface, pulls the cord that closes the net bag around the otter and waits for the boat to come alongside. With great respect for its strong jaws, the "ball of fury" is hoisted aboard and taken to shore. Sedated by a veterinarian, the otter is examined and researchers quickly measure, weigh, and collect as much information as they can on this subspecies known as the southern sea otter before returning it back to the wild.

Are southern sea otters on the decline, and if so why? Researchers hope some answers lie in studying healthy otters in the wild. Projects such as this reflect a growing concern that our wildlife and their habitats are in trouble. Concerned with the future of wildlife populations, researchers and educators, including the DFG, have joined together with the Wildlife Health Center (WHC) at the University of California, Davis, School of Veterinary Medicine to address this and other global issues.

Why are we concerned about the health of wildlife populations? Wild animals act as a barometer of the health of our planet. Everyday we share the same resources as our animal companions, but the expansion of the human population has caused the alteration and loss of unique natural habitat some animals need to survive. Consequently, both wildlife and human health depend on the quality and availability of these same resources. Consider the case of the dwindling southern sea otter population off the coast of central California.

Photo © Dr. Jonna Mazet

The sea otter once roamed the entire west coast from Alaska to Baja California, but their numbers have fallen. They have been protected since 1911 and were listed as a threatened species in 1977. What has researchers currently puzzled in the necropsies of dead otters is that no singular cause stands out. Climatic changes, disease, pollution, and competition for resources all affect otters to varying degrees and need to be factored into the equation when planning a management strategy.

Photo © Dr. Jonna Mazet

The sea otter once roamed the entire west coast from Alaska to Baja California. By the late 19th century, fur traders hunted otters in California to near extinction except for a small enclave discovered near Point Sur. They have been protected since 1911 and were listed as a threatened species in 1977.

What has researchers currently puzzled in the necropsies of dead otters is that no singular cause stands out. Climatic changes, disease, pollution, and competition for resources all affect otters to varying degrees and need to be factored into the equation when planning a management strategy. Solutions to these and other wildlife issues can be complex and unclear. The WHC focuses on ways to balance the needs of people and wildlife — ways that can accommodate the growing human population and the demands we place upon the earth for housing, food production, recreation, and industry.

Researchers associated with the WHC focus on the health of free-ranging and captive wildlife all over the world. Learning about the health of animals enables wildlife specialists to better manage and thus preserve the wildlife population. They seek to learn more about terrestrial species such as mountain lions, desert bighorn sheep, bobcats, elk, cheetahs, and giant garter snakes, as well as animals that live in and depend upon fresh and salt water for survival such as sea otters, seals, dolphins, aquatic birds, and fish. This approach to research has broadened the scope and fields open to veterinarians.

While the role of veterinarians in food animal production has been widely recognized, the role of veterinary medicine in the conservation and

management of wildlife populations in their natural environments has just begun to be acknowledged. Since the 1960s in the United States alone, there has been at least a tenfold increase in the number of veterinarians working full time in the wildlife arena. The DFG has three wildlife veterinarians on its staff. Over half of the WHC faculty are veterinarians and the WHC just finished adding two field veterinarians to its staff. Interest in this field is high and job opportunities for the wildlife veterinarian are increasing.

"Eighty percent of all incoming veterinary students express some interest in wildlife," reports Dr. Walter Boyce, veterinary school faculty member and co-director of the WHC. "The educational goal of the Wildlife Health Center is to prepare students for leadership roles in wildlife health and conservation. We best meet that goal by providing advising services, mentors, and opportunities to work with wildlife to interested undergraduate, veterinary, and graduate students."

The WHC also places a major emphasis on advanced training beyond veterinary school, particularly in the area of research. Currently, the WHC offers competitive grants of $20,000 to $50,000 to researchers for study in the area of oiled wildlife care and survival through the Oiled Wildlife Care Network (OWCN), a joint program with DFG's Office of Spill Prevention and Response (OSPR). The OWCN is a network of 21 wildlife rehabilitation centers and organizations in California that have joined with the WHC around a central theme: to ensure that wildlife exposed to petroleum products receive the best achievable treatment for survival and release back into their environment. "This is a prime example of a successful partnership between an educational institution and a state agency," says Dr. Jonna Mazet, OWCN director.

One of the newest centers in the network is the Marine Wildlife Veterinary Care and Research Center located in Santa Cruz. The center is a cooperative venture between DFG's OSPR, the University of California, Santa Cruz, and the OWCN. Dr. David Jessup, California's first professional wildlife veterinarian and a DFG employee, directs the center. The 20,000 square foot facility was constructed primarily for the rescue and rehabilitation of oiled sea otters, although the facility has been used to care for upwards of 500 oiled seabirds on several occasions. During non-emergency times, well-planned veterinary laboratory space is available for research investigating the decline of the California population of southern sea otters, marine bird mortality events, and marine ecosystem health.

In recent years, the traditional role of the veterinarian as one who treats companion animals and livestock has expanded to include the health of wild animal populations. Until recently, the veterinary school curriculum had little focus on educating students to become wildlife professionals. In the early 1990s, a more structured Wildlife Health Program began to take shape. Veterinary school faculty member, Dr. Walter Boyce, secured funds from the Pew

Photo © Debbie von Blankenship

Dr. David Hinton, professor of veterinary anatomy, physiology, and cell biology, studies the guppy-sized fish medaka because they are particularly sensitive to carcinogens in their environment. By looking at the changes that take place in the health of individual fish in a laboratory setting, he learns more about the exposure of fish in the wild to environmental toxicants.

Photo courtesy of Dr. Susan Shideler

Dr. Susan Shideler, a WHC faculty member, is researching elk reproduction. Above, she monitors a tule elk herd at Pt. Reyes.

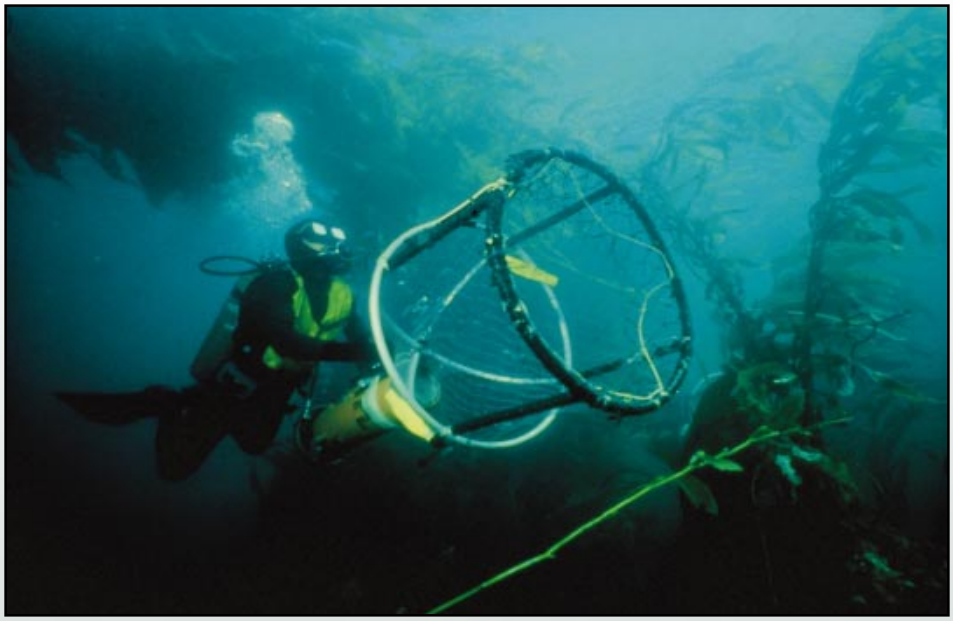

Photo © Fred Bavendam

Sea otter capture device called a Wilson trap.

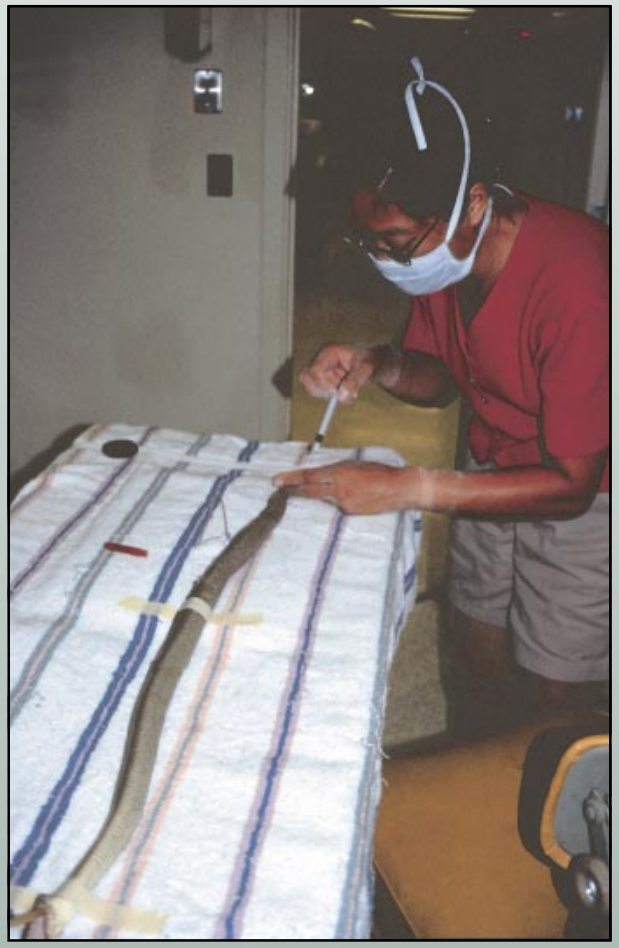

Photo © Dr. Holly Ernest

The giant garter snake is listed as a threatened species. Wildlife veterinarian Dr. Flo Tseng surgically implants a radio transmitter under the snake's skin to allow biologists from the United States Geological Survey, Biological Resources Division to track its movements.

Charitable Trust which launched the program and led to the formation of the Wildlife Health Center. Boyce currently shares the directorship of the WHC with Dr. Jonna A. Mazet, assistant professor with the School of Veterinary Medicine, Department of Medicine and Epidemiology.

Mazet was one of the original four veterinary students that graduated from the Wildlife Health Program. She continued on to complete a masters degree in preventive veterinary medicine and a doctoral degree in wildlife epidemiology, then was hired as a wildlife veterinarian by DFG to oversee the development of the OWCN. Mazet kept her ties with the university because she felt it essential to keep "the policy, management and research tied together."

The WHC is currently made up of 39 faculty members from numerous campus departments as well as governmental agencies and private organizations. Under the dual leadership of Drs. Boyce and Mazet, it has expanded in its role as an umbrella under which faculty, staff, students, and other experts gather to address the complex issues of wildlife health and environmental conservation. Plans are laid as to how to proceed with future research needs, determine curriculum for courses to offer students in the wildlife health field, and establish working relationships with outside agencies.

In the future, the WHC plans to solicit additional private funding to support research on all wildlife. Because animals ignore state and political boundaries, solutions to animal health require a broad approach. To address this need, the WHC is expanding in ways that bring together more faculty and students by seeking funds for broader research areas and field projects and the means to share research findings with a wider audience at conferences through travel grants. Future alliances with the WHC are actively being sought with private industries, state and federal agencies, conservation organizations, academic institutions, zoos and aquaria, and individuals. As the programs grows, the need for larger facilities is becoming apparent; funding for new facilities and all the WHC's activities are supported in part by private funds.

Nancy Ottum is editor at the Wildlife Health Center, School of Veterinary Medicine, UC Davis.